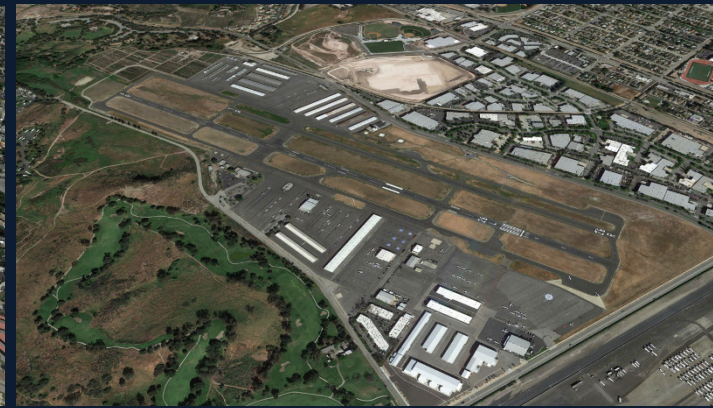
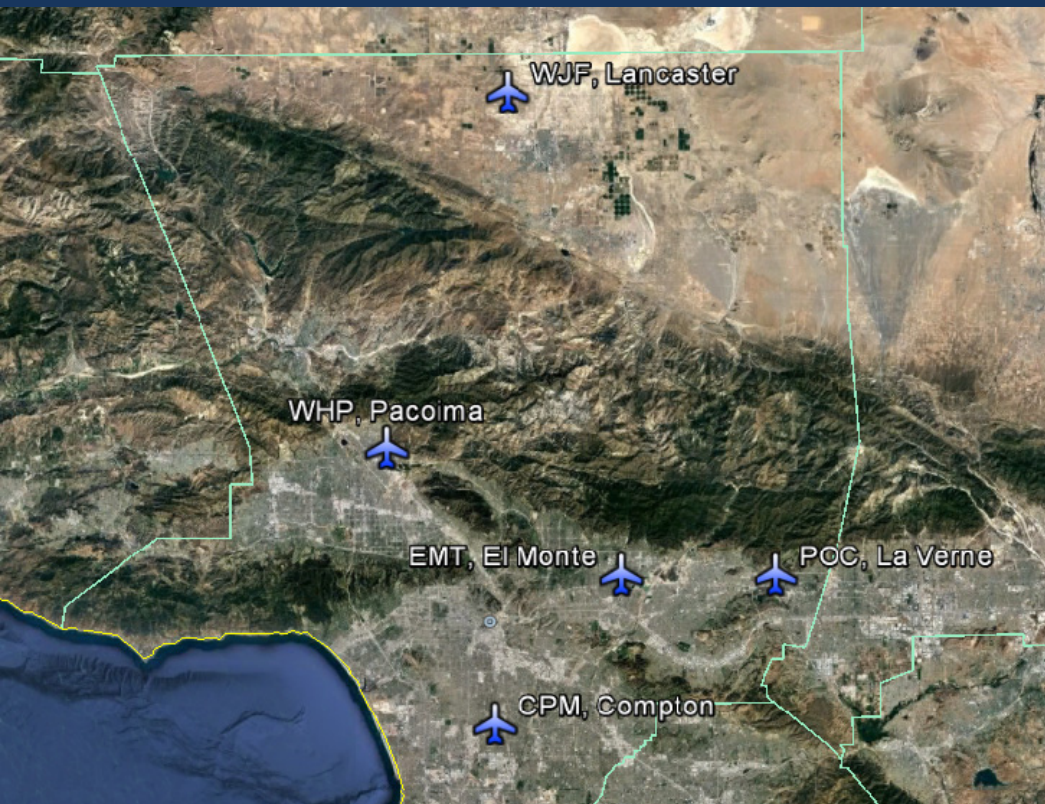


Los Angeles County Department of Public Works

Streamlined
Aviation Sustainability Plan
May 2017
Prepared by C&S Companies



Contents



Source: Google Maps

The Streamlined Aviation Sustainability Plan covers all five County-owned airports:

- Brackett Field (POC)
- Compton/Woodley (CPM)
- General William J. Fox (WJF)
- San Gabriel Valley (EMT)
- Whiteman (WHP)

- Background and Purpose
- Desired Outcomes
- Sustainability Defined
- Focus Areas
- Baseline and Metrics
- General Goals
- Short-Term Strategies
- Appendices (Provided Separately)



Streamlined Aviation Sustainability Plan

Background and Purpose

A Plan for Airports...

The Aviation Division falls within the Los Angeles County Department of Public Works. The County and its individual departments, including Public Works, have made clear commitments to sustainability, establishing policies and programs that integrate these principles into projects, processes, and operations (see pages 6 and 7).

To date, the Aviation Division has **demonstrated sustainability** in a number of its activities and initiatives such as water conservation, lighting upgrades to LEDs, pavement preservation, investment in renewable energy, emissions reductions via installation of electric charging stations, and strategic business planning to promote financial sustainability. However, a cohesive strategy and plan have not yet been developed.

The intent of this Streamlined Aviation Sustainability Plan is to establish a **clear direction** for the airports— identifying focus areas, general goals, and strategy recommendations for the **short term** that will result in a sustainable and more resilient future. In addition, guidance for **integrating sustainability into development and improvements projects** has been prepared. This Plan does not provide a long-term vision/plan for the airports. Instead, it is a **solid starting point to build on current efforts and holistically integrate sustainability into the Aviation Division's areas of influence**, providing a foundation for more aggressive future actions.



Whiteman Airport, Source: C&S Companies, May 2013



Background and Purpose



Whiteman Airport, Source: C&S Companies, 2012

A Plan for Airports...

There are several unique attributes of the County-owned airports that are important to consider in developing an aviation sustainability plan.

First, the County-owned airports are general aviation (GA) facilities and do not have scheduled passenger service. This is an important differentiator as the sustainability opportunities are unique compared to commercial airports that serve passengers. Users of the airports include private pilots, flying clubs, businesses, charters, and emergency service and response agencies, among others. In addition, the airports are an employer for local residents and offer the general public various benefits, services, and facilities such as restaurants and viewing areas.

Second, due to the GA nature of the airports, the majority of the building space is under lease or sub-lease by tenants. This can influence the potential impact of sustainability initiatives.

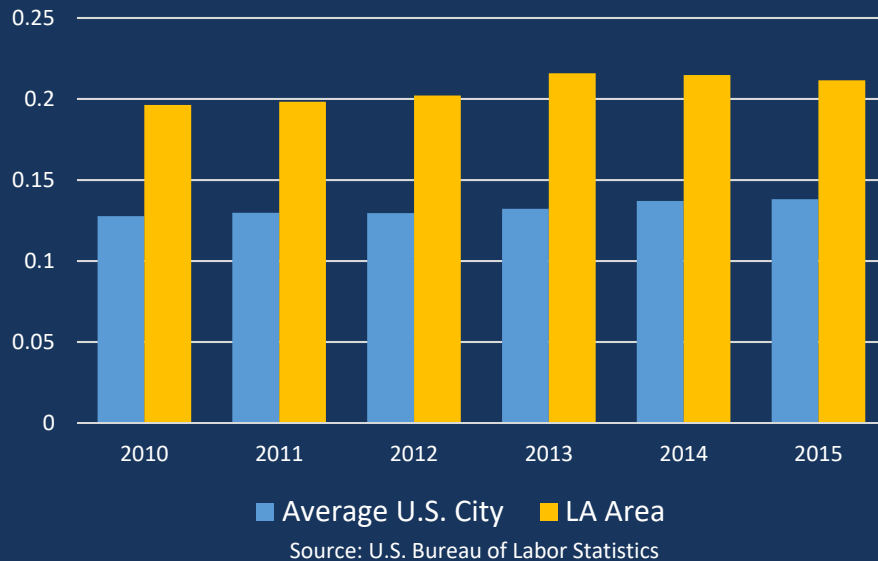
Third, the County currently contracts the operation and maintenance of the airports to a third party (airport operator) that handles aircraft fueling, safety and security, facilities and equipment maintenance, property management (leases, permits and other airport use agreements), and public relations.

These factors have been carefully considered in developing the Plan.



Background and Purpose

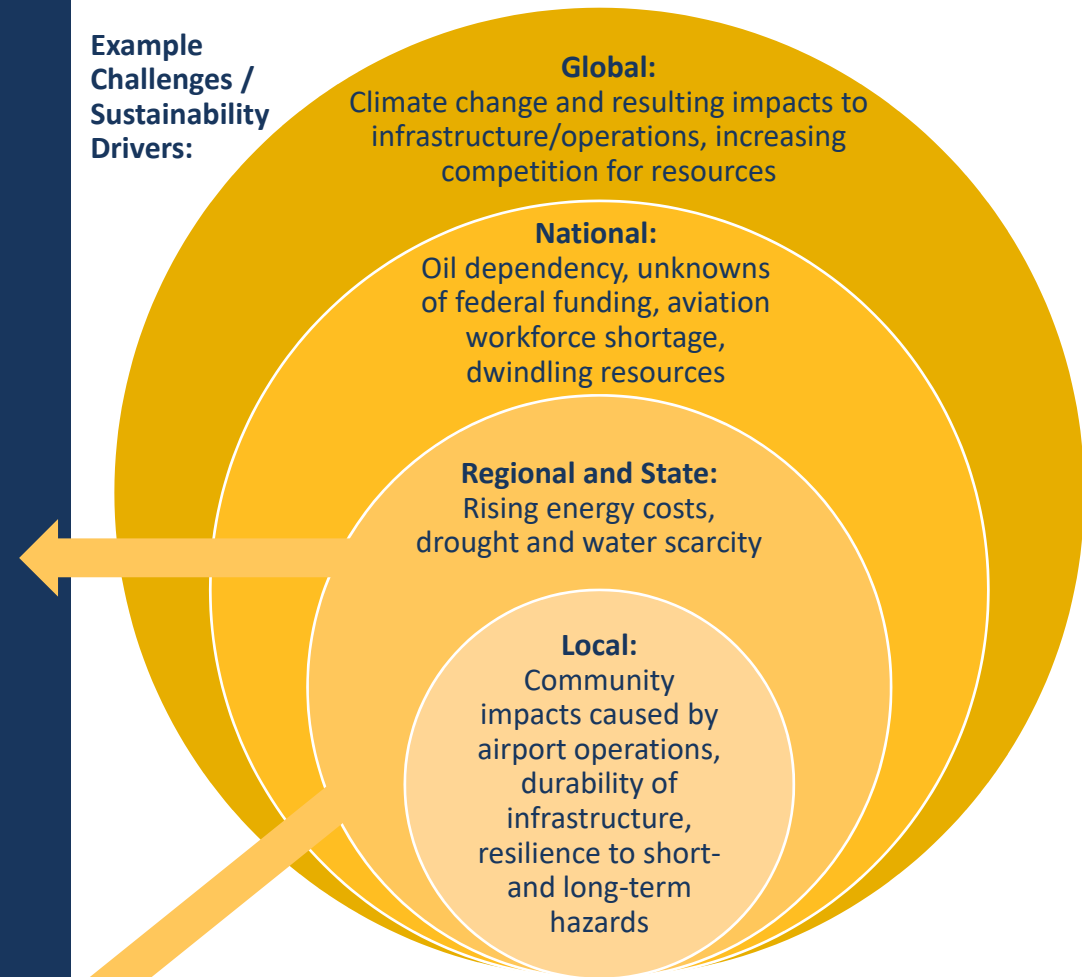
Figure 1: Electricity Rates - Average U.S. City vs. LA Area (\$ per kWh)



Water scarcity concerns are rising as temperatures and evaporation rates increase, resulting in reduced snowpack. The issue is compounded by increasing population growth in the state as determined by a UCLA study on climate change in California.



Example Challenges / Sustainability Drivers:



Why?

The airports and their stakeholders—including the surrounding communities—face a number of challenges that inspire a sustainable path forward. These challenges are at the local, regional, state, national, and even global stage. Although this Plan cannot provide solutions to all of them, the planning process is a positive first step to respond to known hurdles and proactively prepare for future concerns.

Background

The County has an Environmental Sustainability Policy and has set several long-term sustainability targets in response to the increasing concerns over our planet's resources:

Net-Zero Water

Net-Zero Energy

A Climate Resilient
County

Parks & Open Space for
All

Net-Zero Waste

Net-Zero Emissions

County Interim Sustainability Goals

Interim goals are established for each long-term target and progress is reported on a public dashboard. Several of these interim goals are relevant to the airports and therefore considered in the development of this Plan.

- Reduce per capita urban water use by 20% by 2020
- Over 105,000-acre-feet of stormwater capture capacity by 2020

- Increase building energy efficiency by 50% by 2030

- Reduce GHG emissions 11% below 2010 levels by 2020
- Plant 215,000 trees to decrease temperatures in urban areas by 2020

- 4 park acres per 1,000 residents
- Every resident lives within a ½ mile of a park

- 80% diversion by 2025
- 90% diversion by 2035
- 95% diversion by 2045

- Install 500 electric vehicle chargers by 2020
- Minimum 10% of County vehicle purchasing with clean fuel vehicles

Source: Los Angeles County Dashboard, Green LA County, August 2016

As a department within the County, Public Works has taken initiative to further integrate sustainability into its activities by establishing complementary goals, developing a sustainable infrastructure framework, and committing to the use of sustainability rating systems for development and improvement projects (see Page 7). In addition, sustainability objectives have been incorporated into the Aviation Division Management priorities/goals for 2016/2017.



Streamlined Aviation Sustainability Plan

Background

on Sustainability Rating Systems



Brackett Field Airport, Source: C&S Companies, May 2012

In 2016 the County approved a revision to their existing LEED policy for buildings, now requiring all new facilities >10,000 square feet to achieve Gold certification (increased from Silver). In addition, retrofits must pursue LEED certification pending a cost-benefit analysis that considers not only financial but environmental impacts. 2016 also brought a focus to sustainable infrastructure when the County adopted the Institute for Sustainable Infrastructure's (ISI) Envision rating system for horizontal projects. These systems offer valuable guidance to enhance the sustainability of the built environment.

Streamlined Aviation Sustainability Plan



Sustainability Rating Systems

The two rating systems below—LEED and Envision—were considered for the development of this plan.

Leadership in Energy & Environmental Design (LEED)

LEED Certification provides third-party certification and awards buildings that demonstrate sustainability improvements. There are four levels of certification as shown below:



CERTIFIED
40 - 49 POINTS



SILVER
50 - 59 POINTS



GOLD
60 - 79 POINTS



PLATINUM
80+ POINTS

LEED uses a checklist to assess projects, which can be verified under a number of rating systems (e.g., Building Design + Construction, Operation + Maintenance, etc.). LEED also offers accreditation for individuals.

Envision

As defined by the Institute for Sustainable Infrastructure (ISI), "Envision is a guidance and rating system for sustainable infrastructure...developed by [ISI] in partnership with the Zofnass Program at the Harvard Graduate School of Design....The Envision rating system is a project assessment and guidance tool for sustainable infrastructure design. It is an objective framework of criteria and performance achievements that helps users identify ways in which sustainable approaches can be used to plan, design, construct, and operate infrastructure projects." Envision also offers third-party certification for awards (and includes similar levels as LEED) and Envision Sustainability Professional (ENV SP) credentialing for individuals.



QUALITY OF LIFE
13 Credits



LEADERSHIP
10 Credits



RESOURCE ALLOCATION
14 Credits



NATURAL WORLD
15 Credits



CLIMATE AND RISK
8 Credits

Purpose
Wellbeing
Community

Collaboration
Management
Planning

Materials
Energy
Water

Siting
Land + Water
Biodiversity

Emissions
Resilience

Aviation Sustainability Plan Desired Outcomes



Brackett Field Airport Heliport, Source: C&S Companies, September 2014

1. Recommendations for short-term, sustainability strategies that contribute to the County's goals
2. Guidance for incorporating sustainability into airport projects (leveraging Envision guidance*)
3. Decision-making framework that can be applied to evaluate future initiative/strategy ideas

*Given the unique conditions of the, the majority of major projects undertaken by the County are infrastructure-focused. Therefore, the Envision rating system is more applicable than LEED.

Sustainability Defined

Leveraging the Airports Council International – North America definition of sustainability (**Economic Viability, Operational Efficiency, Natural Resource Conservation, and Social Responsibility**, or “EONS”), several focus areas were identified for each element to represent what is most important to the Aviation Division’s sustainability. These were selected based on ongoing efforts, policies, and programs established by the County Board of Supervisors, Public Works, the Aviation Division, and the FAA, specifically considering what the Division has the potential to impact. Focus areas were then validated with the Aviation Division.

Priorities – What’s important here?

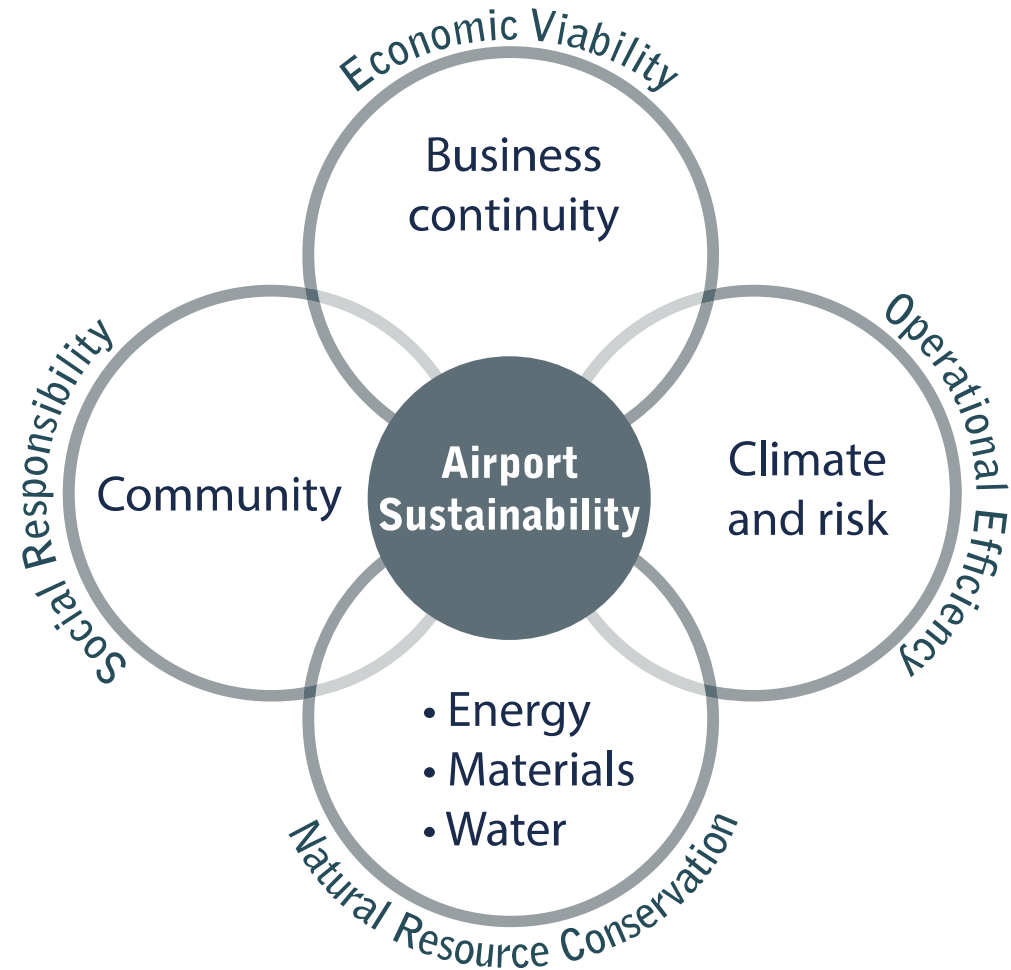
Economic?
Operational?
Natural Resources?
Social?

What do we have the potential to impact?

Economic?
Operational?
Natural Resources?
Social?

Holistic Set of Focus Areas

Aviation Division Sustainability Focus Areas



Descriptions can be found on the following page. Not only do these focus areas align with the factors to the left, but many are also consistent with the categories and sub-categories of the Envision rating system.

In addition to those identified above, **Airport projects will be included as a focus area** given the vast potential to integrate sustainability into airport projects.



Streamlined Aviation Sustainability Plan

Focus Areas and Aim (Relative to Plan)

Airport Projects

Integrating sustainability into major improvement or development projects

Business Continuity

Ensuring a revenue stream that will be resilient to future changes, (somewhat covered by the ongoing strategic business planning efforts); and asset management and life cycle costing to reduce future maintenance costs*

Materials

Sustainable material procurement (e.g., regional, recycled, and rapidly renewable materials) and waste reduction and diversion from landfills

Water

Water quality and conservation including landscaping efforts

Climate & Risk

Two-fold approach to addressing climate change: 1) Minimization through reduction of Greenhouse Gases (GHGs); and 2) Ability to respond and adapt to future changes

Energy

Energy reduction and increasing the percentage of energy from renewable sources

Community

Engagement with surrounding communities and stakeholders and offering benefits at the airports; as investment in the local workforce knowledge and skills via training and education; and customer satisfaction

*Resource reduction measures that decrease operational and maintenance costs will be covered under resource-specific focus areas (e.g., energy).



Baseline

Focus areas are used to generate ideas for potential, short-term sustainability strategies. Prior to doing so, it is important to capture current conditions and previously implemented initiatives to yield an informed Plan. Therefore, a baseline is established for each of the focus areas on the following pages. Several highlights are provided to the right.



San Gabriel Valley Airport Open House; Source: Los Angeles County

Current Sustainability Highlights

Energy efficiency upgrades are underway all airports

The airports host numerous events including Open Houses and a major air show

The use of **LEED and Envision** has potential to contribute to nearly all focus areas

Electric vehicle charging stations are being installed at two of the airports

Existing facilities and infrastructure are preserved and rehabilitated when possible

In response to the CA drought only trees are being watered (no grass)




Baseline: Current Metrics

Not all of the focus areas currently have quantifiable metrics as they would relate to the Plan; those that do have been identified to the right. The baseline effort includes documentation of historical and existing data associated with these metrics, as well as a summary of the current context (i.e., **how** is this focus area being handled/addressed by the Aviation Division) and a list of ongoing sustainability initiatives (i.e., **what** is currently being done). The reporting of initiatives already in place helps further set the context and understand where the airports stand today.

As part of the strategies discussion of this Plan, additional metrics may be identified for future reporting and progress-tracking.

Focus Area and Metric (Relative to Plan)

Airport Projects	N/A	<p>The Customer Service Survey is conducted annually and measures:</p> <ul style="list-style-type: none"> Public Works Focus Areas such as overall operations, helpfulness, & knowledge Aviation Division Focus Areas such as safety & security, facilities & services, appearance, etc. <p>Results are tabulated for each airport to determine overall customer satisfaction with a goal of 3.5 out of 5.</p>
Business Continuity	Annual finances	
Materials	Waste Management Costs	
Water	Water consumption costs	
Climate & Risk	N/A; greenhouse gas emissions may be calculated in the future	
Energy	<ul style="list-style-type: none"> Energy consumption Percent renewable energy 	
Community	<ul style="list-style-type: none"> Customer service survey results (see call-out box above) Economic impact # Of community events 	

Baseline: Airport Projects

Current Context

- The Aviation Division is responsible for identifying and managing capital projects; design and construction is typically outsourced.
- The FAA's Airport Improvement Program (AIP) provides funding for eligible projects.
- Upcoming projects are included in the airport capital improvement program (ACIP) for the five airports.
- All projects must fulfil the required level of environmental compliance per National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) requirements.
- 2017–2021 ACIP includes:
 - Airfield pavement reconstructions/rehabilitations at multiple airports
 - Reconfiguration of an airport entrance road and construction of hold apron (WHP)
 - Relocation of runway thresholds and new markings (WHP)
 - Enhancement of blast protection and stripe vehicle zipper lane (WHP)

Since these proposed improvements involve existing infrastructure or are limited in scope, they are assumed not to require significant environmental analysis (i.e., will be categorically excluded/exempted).

- A new terminal is also being developed at one of the facilities and will pursue LEED Gold certification.

Metrics

- N/A



Ongoing Initiatives

Adaptive Reuse

- Making use of existing facilities/buildings—for example, the Vista Aviation facility at WHP was renovated to be reused as a terminal and administrative building for the Aviation Division (see photos).



Sustainable Design and Construction

- Based on County commitments, new facilities and major infrastructure projects must adhere to the LEED or Envision rating systems (depending on the type and scale of project). As noted, the new terminal building will pursue LEED Gold certification.



Whiteman Airport Terminal/
Administrative Offices
Source: Los Angeles County

- The Aviation Division implements numerous sustainability measures on projects such as construction waste recycling and reuse of materials.
- Phase 1 of the San Gabriel Valley Airport apron ramp project involved in-place pulverization of the recycled pavement material. Using this method, the County reduced truck traffic, air emissions, and dust and noise impacts that would affect the surrounding community.



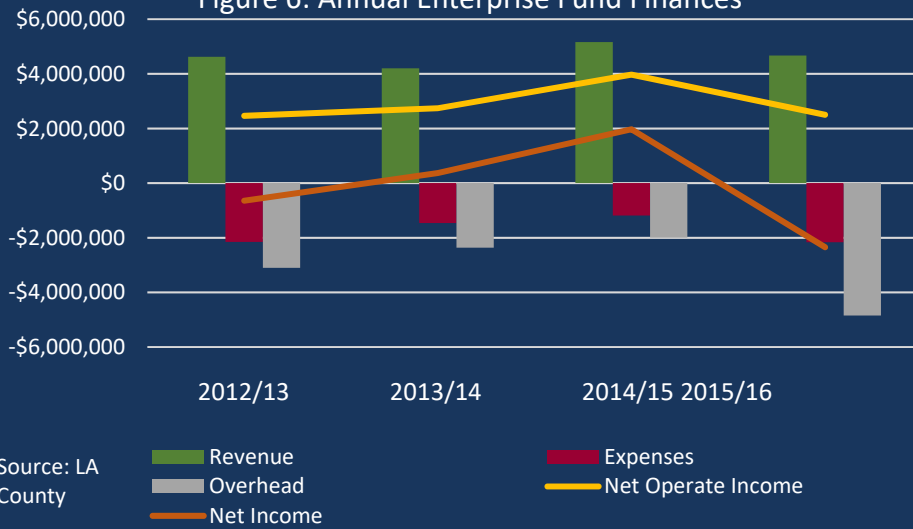
Baseline: Business Continuity

Current Context

- The Aviation Division is responsible for two funds: Capital Projects and Enterprise. All expenses incurred, including matching funds for eligible capital improvement projects, are paid from these funds.
- No funds drawn from the County's General Fund → Heavily reliant on federal and state airport improvement program money to maintain and expand facilities. Ineligible projects are paid for entirely out of the Aviation Enterprise Fund.
- 55% airport revenue goes to the airport operator; 45% to the County.
- The Airport Operator has a \$50,000 maintenance fund.
- The maintenance plan and tracking programs vary based on the airport.
- Scheduled inspections of the facilities are done regularly at each airport; additional maintenance requests are made on an as-needed basis.
- The Aviation Division has a maintenance plan for facilities, operations, nightlight, and audits.

Metrics

Figure 6: Annual Enterprise Fund Finances



Ongoing Initiatives

Reducing Maintenance and Operational Costs

- Many of the initiatives discussed under other categories contribute to reducing operations and maintenance costs including energy efficiency upgrades, facility improvements, and water conservation measures.

Preventative Maintenance

- Airport Operator staff review facilities and grounds on a daily basis, generating work orders addressing immediate maintenance needs.
- POC uses an electronic work order system, which includes marked-up aerials of the airfield accompanied by a detailed description of what and how the maintenance needs to be accomplished (photos can be attached). Once the work order is completed it is submitted to the maintenance supervisor for validation and quality of work, then signed and archived for future reference.

Return to Form Page

Airport: **Brackett Field Airport** Inspector(s): **Alvin Escobedo**

Inspection Date: **12/13/2016 10:35:00 AM** Inspection Time: **10:35 AM**

Prev Inspection Date: **12/13/2016 10:35:00 AM** Date Airport Mgmt. Notified: **12/13/2016 10:35:00 AM**

Weather: ☐ Clear ☐ Fog ☐ Haze ☒ Overcast ☐ Rain ☐ Sunny ☐ Windy ☐ Night ☐ Cloudy ☐ Partly Cloudy ☐

Activity Level: **Normal** Jet-A: **3.69**

Fuel Prices (90): **0** 100LL: **4.69**

Item	Status	Location	Inspector Comments
A. RUNWAYS/TAXIWAYS/RAMPS			
1. Bird Hazard	Observed / Acceptable		
2. Drainage *	Observed / Acceptable		All drains looked clear
3. Foreign Objects *	Observed / Acceptable		
4. Fuel/Oil Spillage *	Observed / Acceptable		
5. In-field Areas	Observed / Acceptable		
6. Markings	Observed / Acceptable		
7. Overrun Areas	Observed / Acceptable		
8. Potholes	Observed / Acceptable		
9. Shoulder Drop-off	Observed / Acceptable		
10. Winds	Observed / Acceptable		
B. LANDING AIDS			
1. NDG	Not Observed / Not part of ins	N/A	
2. Beacon	Observed / Acceptable		
3. REILs	Observed / Acceptable		
4. VASI/PAPI	Observed / Acceptable		
5. Wind Socks	Observed / Acceptable		Look good. Good color
6. Wind Tee	Observed / Acceptable		
C. SECURITY GATES & FENCING			
1. Card-Operated Gates	Observed / Acceptable		
2. Perimeter Fencing	Observed / Acceptable		
3. Service Gates	Observed / Acceptable		
D. FUELING FACILITIES			

Brackett Field Airport Electronic Work Order System
Source: Airport Operator

- The airports' maintenance plans help address preventative maintenance. The County is currently updating its Pavement Maintenance and Monitoring Plan for all facilities.

Strategic Planning

- The Aviation Division is updating its Strategic Business Plan that contributes to a sustainable revenue for the future.



Streamlined Aviation Sustainability Plan

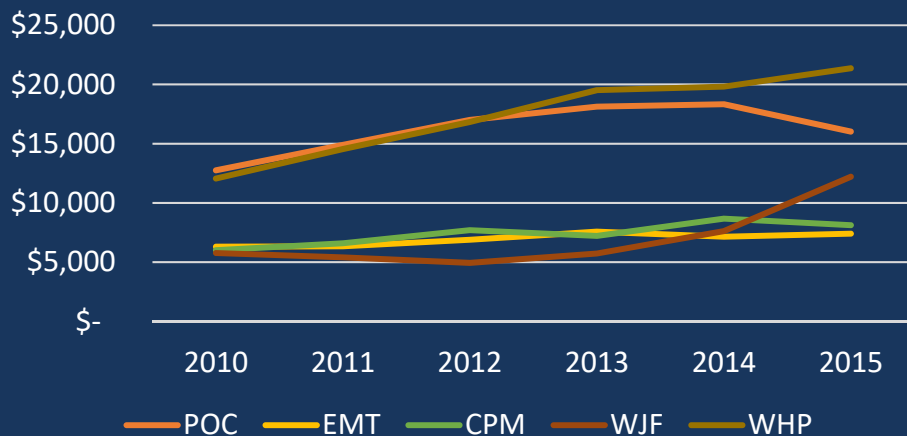
Baseline: Materials

Current Context

- Each airport has their own waste management and collection contract overseen by the Airport Operator.
- Scheduled collection occurs once or twice a week depending on the facility.
- Some tenants handle their own waste, but primarily managed through the airports' systems.
- Procurement of airport materials is determined by the Airport Operator with an emphasis on cost effectiveness.

Metrics

Figure 7: Annual Trash Removal Costs



Source: Airport Operator

Although not adjusted for changing waste management costs (which could potentially indicate a reduction in total waste amounts), the graphic above still presents valuable data. As shown, the money spent on trash disposal has increased for all five of the airports over the past five years, emphasizing the importance of reducing total waste generated and increasing diversion from landfills.

Ongoing Initiatives

Waste Reduction and Diversion from Landfills

- WHP's repurposing of an existing building, reconfiguring it for administration offices and a pilot terminal, helped reduce waste and save on virgin materials.
- Opportunities for material reuse are sought for development and improvement projects.
- Recyclables are collected at CPM, POC, and WHP, to varying degrees:
 - Plastic and paper products—CPM, POC, WHP
 - Bottles and cans (separately)—POC
 - Aluminum—CPM
- All airports recycle oil and have bins available for users and tenants.
- CPM uses grass clippings and leaves as decomposed fertilizer.

Outreach

- POC and EMT host annual waste round-ups, a County program administered by the Environmental Division.

Diversion from landfills may include reuse, repurposing, and/or recycling of materials

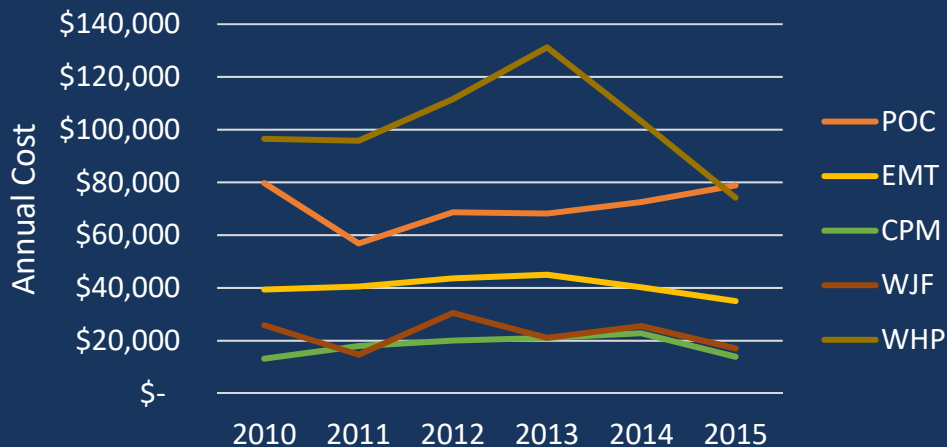
Baseline: Water

Current Context

- Water bills paid by Airport Operator (excludes private development on ground leases).
- Some sub-metering.
- WHP water and sewer provided by City of Los Angeles; four other airports receive from local district.
- The County's Watershed Management Division of Public Works is responsible for flood risk management, water quality, water conservation, open space, and recreational needs.
 - Also responsible for periodic inspection of WHP for compliance with water regulations. Whiteman Airport is closely monitored due to its location in the northern section of the Los Angeles River watershed.

Metrics

Figure 2: Airports' Water & Sewer Costs (\$)



Source: Airport Operator Records, 2016



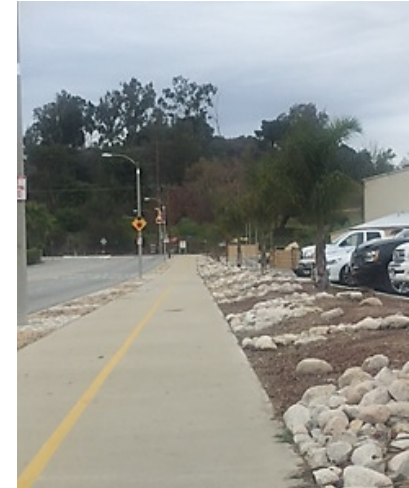
Ongoing Initiatives



William J. Fox Airport
Source: Los Angeles County

Quality

- Water monitoring twice a year at WHP per requirements.
- Facility-wide storm water pollution prevention plans.



Brackett Field Airport
Source: Los Angeles County

Quantity

- Trees are being watered but not lawns. The County imposed this as a continued restriction even after strict conservation requirements have slackened.
- Measures put in place to prevent unauthorized lawn irrigation including removal of spigot handles (connections locked at WHP).
- Waterless urinals at most airports.
- Desert landscaping project around terminals at EMT and WHP (removed grass around terminal).
- Wood chips used to keep in moisture at CPM.
- Required many master tenants to install sub-meters.



Whiteman Airport
Source: Los Angeles County





Baseline: Climate & Risk

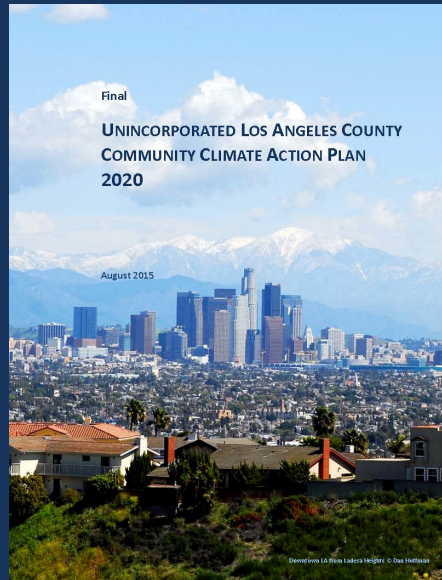
Current Context

Air Quality and Emissions

- Alternative transportation encouragement is minimal due, in part, to city proximity and extreme weather conditions at some of the airports, especially WJF.

Climate Adaptation and Resilience

- Emergency Preparedness—On-site first response available at the airports; then contact the fire department. The airports serve as a base of operations for local firefighting efforts by the U.S. Forest Service, California Department of Forestry and Fire Protection, and other agencies.
- Resilience—Each airport has a backup generator, contributing to the resilience during short-term hazards. The County is also working to address climate change by identifying vulnerabilities and taking actions to mitigate these.
- The County also has a 2020 Community Climate Action Plan for the unincorporated areas.



Metrics

- N/A – Greenhouse gas (GHG) emissions have been calculated by the County but did not separate aviation-related sources.

Ongoing Initiatives

Air Quality and Emissions

- Using electric golf carts at CPM and EMT.
- County-wide diesel vehicle anti-idling policy in place (little enforcement).
- Electric vehicle charging stations currently at WHP and EMT.
- Bike rack available at EMT.

Climate Adaptation and Resilience

- The U.S. Forest Service has a permanent year-round base of operations at WJF.
- Fire drills held regularly.
- U.S. Forest Services and Cal Fire used the POC runway during 2016 forest fires (WJF was also offered).



Fire Drills at Compton/Woodley Airport
Source: Los Angeles County, January 2017



Fire Drills at Compton/Woodley Airport
Source: Los Angeles County, January 2017



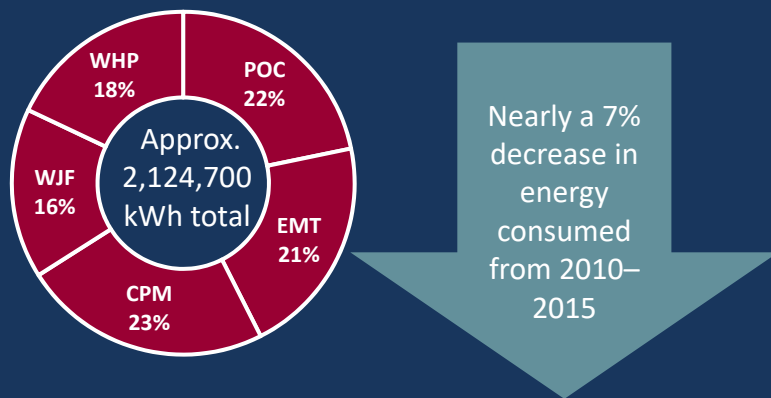
Baseline: Energy

Current Context

- Energy bills paid by Airport Operator (excludes private development on ground leases).
- Electricity provided by at least two different entities including the Los Angeles Department of Water and Power (LADWP) and Southern California Edison (SCE) (airport-dependent).
- No sub-metering.

Metrics*

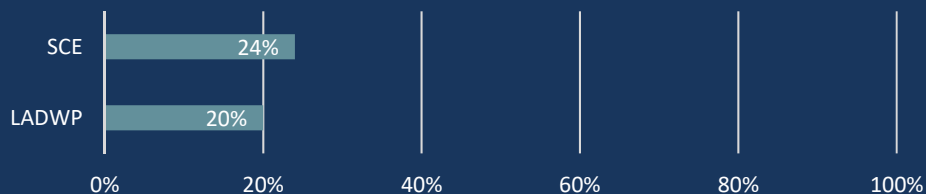
Figure 3: 2015 Energy Consumption—% of Total



Source: Airport Operator Records,* 2016

Despite this progress, there was a slight increase from 2013 to 2014.

Figure 4: % Renewable Energy Sourced by Utility (2014)



Source: Center for Sustainable Energy

*Energy consumption calculated using costs paid by Airport Operator and average energy rates in the LA area; more thorough analysis is outside of the scope of this Plan

Ongoing Initiatives

Efficiency

- Ongoing indoor and outdoor building light upgrades to LEDs at all airports; tenants are encouraged to participate in utility-offered programs.
- LED runway lighting will be included in upcoming CPM project.

Conservation

- CPM's and WHP's outdoor lighting is on photocells (i.e., turned off during daylight hours).
- CPM's restrooms and POC's former Nostalgia hangars now have motion sensors for lighting; additional efforts underway.
- White roof at WJF, helping to reduce air conditioning needs.

Renewables

- Conducted a solar siting feasibility study.
- Tenant at WHP has installed a PV array on its hangar; additional interest expressed by others.
- In addition, state regulations require utilities source 20% of their energy from renewables by 2010 and achieve 33% by 2020 and 50% by 2030.



Baseline: Community

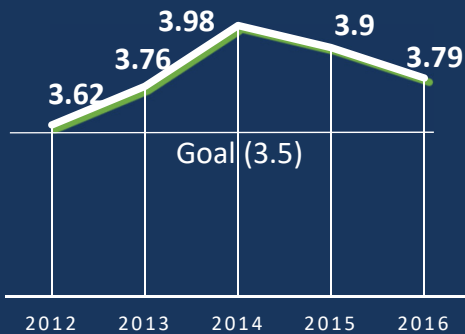
Current Context

Community is a broad category but in general refers to the interaction with and investment in the various stakeholders involved with the airports. Although many more exist – as well as sub-groups of each—the following stakeholder categories are identified for the purposes of this Plan:

- Customers (pilots, business partners, and other users)
- Surrounding Community
- Employees

Metrics

Figure 5: Customer Survey Results
(average for all airports)



Source: Los Angeles County

Table 1: Airports' Economic Impact

Total Annual Impact for 2013
(latest available information)

Output	\$140,100,000
Labor Income	\$52,400,000
Employment	1,184
Possessory Interest Tax	\$406,000

Source: AECOM and IMPLAN, 2013



155 Various Community Events in 2016

Photos Taken at Annual Air Show
Source: lacoairshow.com



Ongoing Initiatives

Customers

- Title VI Plan in place to prevent discrimination.
- Maintenance Fund to smoothly facilitate improvements and repairs.

Customers/Community

- Fund available to Airport Operator for marketing and community outreach.

Community

- 155 community events were held at the airports in 2016—including the WJF Air Show!

WHP Open House drew over 1,000 people!



Employees

- Aviation Division undergoes necessary workplace training, attends industry conferences, and several are pursuing their Envision Sustainability Professional credential.
- Airport staff training by the Airport Operator is provided mostly in-house. There is also an employee reimbursement program for flight training expenses.



General Goals

General goals are established for each focus area to help guide the identification of potential sustainability strategies.* These are similar to the “Aims” described on Page 12, and consider the County-wide sustainability goals discussed on Page 6.

*Due to the streamlined nature of this planning process, specific objectives or quantitative targets are not set unless previously established or easily identified. More detailed planning may be conducted in the future.

The Aviation Division aims to increase the Airport Customer Service goal every 2 years by 0.1 until this is increased to 4 out of 5. (Currently at 3.5; see Page 19.)

Airport Projects

Integrate sustainability into major improvement or development projects

Business Continuity

Ensure a revenue stream that will be resilient to future changes, which may be covered by the ongoing strategic business planning efforts; and emphasize strategic asset management and life cycle costing to reduce future maintenance costs*

Materials

Procure sustainable materials (e.g., regional, recycled, and rapidly renewable materials), reduce waste, and increase diversion from landfills

Water

Preserve water quality and conserve potable water, particularly through landscaping measures

Climate & Risk

Minimize climate change through reduction of greenhouse gases (GHGs) and enhance the airports’ ability to respond and adapt to future changes

Energy

Reduce energy consumption and increase the percentage of energy from renewable sources

Community

Increase engagement with the surrounding communities and stakeholders, preserve or enhance benefits at the airports, invest in the local workforce, and increase customer satisfaction

*Resource reduction measures that reduce operational and maintenance costs will be covered under resource-specific focus areas (e.g., energy)



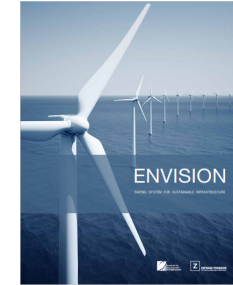
Strategy Generation and Evaluation

Once the baselines and general goals were established for each focus areas, strategies for contributing to these goals were identified using a number of resources including the consultant's internally developed resources documenting initiatives that have been considered, assessed and implemented on at airports across the country. These ideas were then screened and prioritized to result in high-value, implementable strategies recommended in the short term.

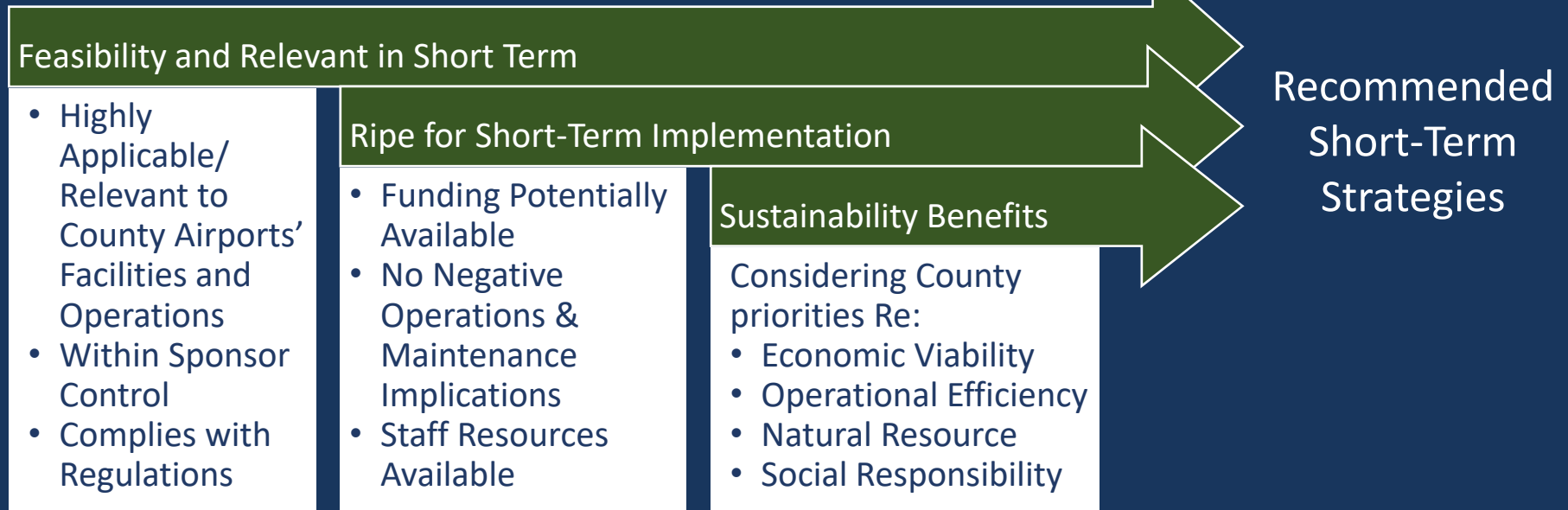
Generation Sources

- County ideas and commitments
- Consultant's internal resources
- External resources
 - Sustainable Aviation Guidance Alliance
 - Airport Cooperative Research Program
 - Envision and LEED

>150 ideas generated....



Screening/Prioritization



Recommended Strategies have been sorted/integrated into...

Short-term strategies for Aviation Division implementation

These strategies are summarized on the following pages; additional information and details have been provided to the Aviation Division for future reference and tracking.

Short-term strategies for incorporation into Airport Operator requirements

These are based on the current division of roles and responsibilities between the Aviation Division and Airport Operator. These strategies are provided on Page 27 with additional details provided to the Aviation Division.

Sustainability Toolkit for Non-LEED Projects

This incorporates numerous sustainability strategies for non-building projects (given the County's emphasis on infrastructure projects within the short-term horizon) and positions the County for adherence to the Envision rating system. The Toolkit has been provided directly to the Aviation Division for future use.

Short-Term Strategies for Aviation Division Implementation

The following are **currently underway** and will either be completed in 2017 or put in place as continuous measures.

Strategy	Contributes to Goals?					
	Business Continuity	Materials	Water	Climate & Risk	Energy	Community
Identify, pursue & report on funding to convert service vehicles to alternative fuels.						
Complete and implement update of business plan.						
Revise the Airport Pavement Management Program.						
Develop a Project Management Plan for FAA and Caltrans Aeronautics programs to enhance airport project delivery.						
Promote professional development of staff related to sustainability.						
Continue with water conservation measures and restrictions implemented during the drought.						
Continue to host annual waste roundups at two or more of the airports.						
Encourage alignment of airport facilities/services with educational institutions.						
Continue with the annual Airport Customer Service Surveys with an increasing goal. For any airport that doesn't meet the goal, require a plan to address areas of concern.						
Ensure that public meetings are at varied times and locations.						
When a need arises for a new facility/space, evaluate existing buildings on site to determine potential for adaptive reuse.						



Short-Term Strategies for Aviation Division Implementation

The following are proposed to be at least initiated in/by 2017 or 2018.

Strategy	Contributes to Goals?					
	Business Continuity	Materials	Water	Climate & Risk	Energy	Community
For building projects, follow County's LEED policy and require high-efficiency equipment and fixtures.						
Apply the Toolkit for Non-LEED Projects.						
Incorporate identification of alternative funding sources for non-AIP eligible projects during internal ACIP discussions.						
Pursue Zero Emissions and Vehicle Infrastructure (ZEV) Program funds for electric fleet/service vehicles.						
Share questionnaire results from airport managers indicating inconsistent use of electronic work order system and best practices in place at different facilities.						
Upgrade all lighting to LEDs.						
Show leadership in aviation sustainability by pursuing Envision verification and/or LEED certification.						
Specify drought-tolerant landscaping.						
Establish a sustainability budget to fund projects that are not AIP-eligible and require upfront investment.						
For major projects involving an alternatives assessment, identify and prioritize life cycle costs versus capital cost comparisons; where sensible, fund incremental difference through the sustainability budget.						

Short-Term Strategies for *Aviation Division Implementation*

The following are proposed to be at least **initiated in/by 2019**.

Strategy	Contributes to Goals?					
	Business Continuity	Materials	Water	Climate & Risk	Energy	Community
Identify at least three areas viable for solar photovoltaic panels and market these to solar companies.						
For materials excavated/removed during construction that cannot be reused on the project, identify other uses at County facilities.						
Incorporate sustainability criteria into approval process for tenant improvements and establish tenant improvement guidelines.						
Enable the opening of a restaurant at WHP.						
Work with one of the restaurant operators to implement a pilot composting program.						
Complete an economic impact study in 2019 and compare results to the 2013 study.						

Short-Term Strategies for Aviation Division Implementation

The following are proposed to be at least initiated in/by 2020 or 2021.

Strategy	Contributes to Goals?					
	Business Continuity	Materials	Water	Climate & Risk	Energy	Community
Support update to Airport Land Use Compatibility Plans.						
Retrofit existing hangars with LED lighting.						
Install sensors to control lighting.						
Install low-flow water fixtures and/or waterless urinals at all facilities.						
Post signage about the County's diesel anti-idling policy.						
Prepare greenhouse gas emissions inventories for each airport.						
Consider third-party verification of the emissions inventory.						
Pending the results of the above, pursue verification to demonstrate leadership and transparency.						
Perform a climate change vulnerability assessment.						
Complete update to Rules and Regulations incorporating sustainability.						
Distribute press releases regarding specific airport projects and sustainability accomplishments.						
Install a rainwater collection tank at one of the airports.						
Implement composting at major airport events.						
Work with involved County divisions to implement electronic submittal/review processes for design and construction projects.						
Install additional electric vehicle charging stations for public and employee use, targeting availability at all airports.						



Short-Term Strategies for *Incorporation into Airport Operator Requirements*

Given the role of the Airport Operator and current processes and procedures in place (see Baseline Assessment), it is recommended that the County incorporate the following into the next contract update (current contract expires in 2021) or Request for Proposals as applicable:

Recommended Requirements	Contributes to Goals?					
	Business Continuity	Materials	Water	Climate & Risk	Energy	Community
a. Request actual consumption/quantity data for waste, energy and water; report out at Aviation Commission meetings noting peaks & identifying solutions.						
b. Establish and implement an environmentally preferred product purchasing policy or follow County guidelines.						
c. Recycle allowable materials at all airports and co-locate recycling bins adjacent to all trash cans with educational signs.						
d. Provide at least biannual educational training on waste reduction/recycling practices and storm water pollution prevention measures.						
f. Hold a fun run to invite surrounding community members, airport users, and tenants to come together at an airport and donate contributions to a local charity.						

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Appendices

[Provided Separately]





County of Los Angeles
Department of Public Works
Aviation Division

Streamlined Aviation
Sustainability Plan – Appendices

May 2017

County of Los Angeles
Department of Public Works
900 South Fremont Avenue
Alhambra, CA 91803



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Appendix C – Evaluation Framework



Introduction to Appendices

The following Appendices serve as background and supporting documentation for the Streamlined Aviation Sustainability Plan (Plan) developed for the Los Angeles County Department of Public Works (Public Works) Aviation Division.



Appendix A – Baseline Assessment

A-1 Focus Areas

Baseline assessments were conducted for each of the sustainability focus areas identified in the Plan. Given that this is a streamlined Plan, detailed studies and analyses were not conducted. Instead, information was gathered using desktop research, interviews with Aviation Division staff, coordination with the Airport Operator including distribution of surveys to the five airport managers, and review of available records. Because the Plan is intentionally designed to be a concise document for internal and public distribution, certain details were omitted to maintain a manageable and easily understandable document. The following presents omitted details that were relevant to the planning process and outcomes. This Appendix is not intended to capture all information obtained during the baseline assessments, nor to repeat what is shared in the Plan.

1.1 Airport Projects

N/A; relevant information is summarized in the Plan.

1.2 Business Continuity

Current Context

As documented on the County's website:

“The Aviation Division is responsible for two funds: the Aviation Capital Projects Fund and the Aviation Enterprise Fund. All expenses incurred by the Aviation Division, including matching funds for eligible capital improvement projects, are paid from these funds. The Aviation Division does not draw any funds from the County's General Fund and, therefore, relies heavily on Federal and State airport improvement program grant money to maintain and expand facilities at the County-owned airports. Projects related to maintaining and expanding facilities and infrastructure at the County-owned airports that are not eligible for Federal or State funding are paid for entirely out of the Aviation Enterprise Fund.”

See also Airport Managers Questionnaire Results in Section A-2.

1.3 Materials

Ongoing Initiatives

- All airports recycle waste oil; Brackett Field Airport (POC) has three oil bins available for public deposit of oil, which is recycled on an as-needed basis.
- Whiteman Airport (WHP) repurposed an existing building, reconfiguring the facility for administration offices and a pilot terminal. This building is also being used as a non-profit community center and for civil air patrol activities.



1.4 Water

Current Context

According to the County's website, the Los Angeles County Watershed Management Division of the Public Works Department is responsible for addressing flood risk management, water quality, water conservation, open space, and recreational needs. This Division is also responsible for periodic inspection of WHP for compliance with water regulations. WHP is closely monitored due to its location in the northern section of the Los Angeles River Watershed. The major tributary that feeds into the Los Angeles River from this area is located one mile southeast of WHP, beginning at Hansen Dam and flowing south along man made culverts.

1.5 Climate & Risk

Ongoing Initiatives

The airports serve as a base of operations for local firefighting efforts by the U.S. Forest Service, California Department of Forestry and Fire Protection, and other agencies. The U.S. Forest Service has a permanent year-round base of operations at General William J. Fox Airport (WJF) and is extremely busy during fire season. In 2016, POC was used by both the U.S. Forest Service and Cal Fire to fight fires.

1.6 Energy

Current Context

Because electricity data was provided in dollars spent, the average electricity rates for the Los Angeles-Riverside-Orange County area as reported by the U.S. Bureau of Labor Statistics were applied to determine total consumption.¹ Table 1 presents the resultant energy consumption from 2010 to 2015.

Table 1 – Total Airports Energy Consumption

Year	Total Energy Consumption (kWh)	% Change
2010	2,279,355.79	
2011	2,184,642.07	(4.16)
2012	2,172,804.07	(0.54)
2013	2,101,671.06	(3.27)
2014	2,154,190.03	2.50
2015	2,124,712.06	(1.37)

Source: Airport Operator, U.S. Bureau of Labor Statistics, and C&S

Ongoing Initiatives

- New generator installed at WJF.
- Several airports are partnering with the utilities to implement energy saving projects:

¹ A more thorough analysis is outside of the scope of this Plan.



- At San Gabriel Valley Airport (EMT), Southern California Edison is carrying out a savings program to upgrade lighting technology starting with the terminal building and some hangars.
 - WHP is currently collecting bids from contractors as part of the CLIP program from the Los Angeles Department of Water and Power (LADWP) to upgrade all outdoor lighting to LEDs.
- There are timed lighting fixtures on the WHP terminal building.
- The County conducted a solar siting feasibility study several years ago and a tenant at WHP has since installed a PV array on its hangar. A second master lease holder is currently exploring installation at WHP.
- State regulations required utilities source 20 percent of their energy from renewables by 2010 and achieve 33 percent by 2020 and 50 percent by 2030.

1.7 Community

Current Context and Metrics

The Airport Customer Service Survey is conducted each year and measures the following:

- Public Works Focus Areas:
 - Overall Operations
 - Helpfulness
 - Promptness
 - Courtesy
 - Knowledge
- Aviation Division Focus Areas:
 - Security
 - Safety
 - Runways/Taxiways
 - Public Viewing/Recreation Area
 - Public Restroom
 - Pilot Lounge/Flight Planning Facilities
 - Lighting/Marking Airfield Guidance Systems
 - Fuel Facilities
 - Availability of Pilot Supplies
 - Appearance
 - Aircraft Washing Facilities
 - Aircraft Services

The results are tabulated for each facility in order to determine overall customer satisfaction with a goal of 3.5 out of 5. According to the results from the five most recent years, the average across the five airports has continuously exceeded the goal of 3.5. However, in 2016 the result for Compton/Woodley Airport (CPM) was 3.47, which is below the goal.

County of Los Angeles Department of Public Works Streamlined Aviation Sustainability Plan Appendices



With regards to the airports' economic impact, a report prepared by AECOM in 2013 was referenced. Although dated, this information could be compared to future studies:

Table 2 – Total Annual Impact by General Aviation Airport to the County of Los Angeles

	POC	CPM	EMT	WJF	WHP	Total
Output	\$35,400,000	\$14,700,000	\$21,500,000	\$14,000,000	\$54,500,000	\$140,100,000
Labor Income	\$12,600,000	\$6,200,000	\$7,800,000	\$6,800,000	\$19,000,000	\$52,400,000
Employment	317	110	185	158	412	1,184
Possessory Interest Tax	\$103,000	\$67,000	\$102,000	\$30,000	\$104,000	\$406,000

Source: AECOM and IMPLAN, 2013

Ongoing Initiatives

- Airport Operator has a marketing fund, which was mandated in the last renewal of their contract with the County. This includes a requirement to spend \$65,000 per year in marketing and community outreach including the enhancement of open house events. (There is also a \$50,000 fund for maintenance, which was created to empower airport managers.)
- Open houses are held at all of the airports (a contractual obligation).
 - Other events held at the airports are typically driven by off-airport organizations.
 - As of August 2016, EMT had hosted airport tours for over 45 schools. These included a tour for 10 students from Junior Blind of America, who were given the opportunity to sit in the cockpit of the airplanes.
 - At WHP, the Professional Helicopter Pilots Association held its first meeting in the new conference room facility in the fall of 2016. The Experimental Aircraft Association also hosted its Young Eagles event and a mini career day at the Airport in the summer.
 - Every fourth Saturday of the month kids fly for free at EMT.
- The following presents the public events held at the airports in 2016:



Table 3 – Airport Public Events

Type of Event	# of Events				
	POC	CPM	EMT	WJF	WHP
School Tours	4	20	15	6	2
Open House/Air Fair/Air Show	1	2	1	1	1
Display Days	12	24	12	12	12
Pancake Breakfast/Chili Cook-off				4	2
Boy/Girl Scouts Aviation Badge Days					2
EAA Young Eagle Flying Days					12
Pilot Meet & Greet BBQ	2				
BBQ			1	1	
Poker Run	2			1	
FAAST/Wings Seminars	5				
Totals	24	46	29	25	31
Grand Total	155				

- The Aviation Division undergoes all expected training, e.g., workplace violence, discrimination, best practices. Staff also go to industry conferences, and some are receiving their Environment Sustainability Professional (ENV SP) credential.
- Airport staff training by the Airport Operator is provided mostly in-house (approximately 12 employees at each airport). There is a reimbursement program for flight training expenses for employees.

A-2 Airport Managers Questionnaire Results

A questionnaire was prepared for the Airport Operator and distributed to each of the airports' managers to obtain input on current initiatives, processes and procedures at each of the facilities. The results are provided below.



Table 4 – Questionnaire Results by Airport					
	CPM	EMT	POC	WJF	WHP
Maintenance:					
a. Does your airport have a formalized work order process or maintenance plan/tracking program? If so, can you share or describe this?	We use paper form logs and work orders for all maintenance program.	No formalized process other than to record what is broken.	Yes. The airport reviews facilities and grounds on a daily basis, generating work orders addressing immediate maintenance needs. These work orders are assigned equally to all shifts. Additionally, an airport maintenance program is set that looks at the entire airfield from a preventative maintenance perspective. This includes: pavement, buildings/hangars, airfield lighting, ground service equipment, and operations vehicles. One example is a complete airfield signage repair and cleaning project that occurs every October. The work order process works like this: work orders include a marked-up google earth overhead screenshot of the airfield accompanied with a detailed description of what and how the maintenance needs to be accomplished. The work order also allows for the uploading of photos to enhance project comprehension (see attached). When the work order assignment is completed it is submitted to the maintenance supervisor for validation of work completion and quality of work. The work order is signed and archived for future reference.	Some aspects are formally tracked, at this time it's all done manually.	Maintenance is addressed as needs arise. We do have scheduled maintenance and we track all vehicle maintenance in log books. Any hangar or airfield maintenance is noted in our daily logs.
b. Do you conduct regular inspections or rely on requests to initiate repairs/improvements?	We do daily, monthly and yearly logs.	Regular runway inspections, annual hangar inspections otherwise request to initiate repairs.	Both. The airport inspects the airport daily but there will always be maintenance events that are unexpected (requests).	Both.	We inspect all areas of the airport daily and address any items observed. Hangar maintenance requests will often come directly from tenants though as issues are often not visually observable or are inside the locked units.
Energy:					
a. Do any of your tenants have ongoing or planned renewable energy projects (e.g., solar)? If so, please describe.	N/A	No.	Not at this time.	None.	We have a master lease holder with a solar project on their roof and a second master lease holder exploring installation.
b. Have your facilities undergone efficiency upgrades (e.g., LEDs, replacement of HVAC equipment, etc.)? If so, please describe.	All outside lighting is on photocells and our restrooms have motion sensors.	Some internal/exterior building lighting upgrades.	Yes. The airport recently upgraded a number of buildings to the new led standard. All airport tenants were encouraged to participate in the program.	Partial upgrades. Building LEDs and some new HVAC.	We are currently collecting bids from contractors as part of the clip program from LADWP to upgrade all our outdoor lighting to LEDs. We completed indoor led upgrades last year as well. We also have timed lighting fixtures in our terminal building and photocells on all outdoor lighting.
Water:					
a. Have your facilities undergone water conservation improvements (e.g., waterless urinals, etc.)? If so, please describe.	Yes, just only watered tress, usage of wooden chips to keep moisture. Also, we have installed waterless urinals	Waterless urinals at terminal building, desert landscape project around terminal	Yes. The airport has waterless urinals.	None.	We have installed waterless urinals in our bathrooms.



b. What water conservation measures are in place (e.g., no longer watering grass areas)?	We have completely stopped watering grass areas due to the drought.	No longer having grass, tenants not allowed to use water spigots.	Very little irrigation takes place on the airfield preventing much improvement in the way of water conservation.	No longer watering grass.	We have discontinued the watering of grass areas and ensured all water connections on the airfield are locked to stop unauthorized water usage.
Air:					
a. Any measures in place to promote alternative transportation/discourage single-occupancy vehicle use (e.g., bike racks)?	N/A	One bike rack at terminal.	No	Likely not practical due to our proximity to the city and extreme weather conditions.	Not at this time.
b. Does your facility have or have plans for electric vehicle charging stations?	Yes, we use electric golf carts.	Plans in place for an EV charging station.	Not specifically, but the County has shown an interest.	Yes.	Vehicle charging stations are scheduled for installation in the Airport terminal parking lot.
c. Any other emission reduction measures in place such as an anti-idling policy?	No, don't have any policy.	No.	The Airport is a destination and is not subject to the problem.	We do have an anti-idling policy. It applies to airport operations staff. No real enforcement, it is policy.	Not at this time.
6. Any other sustainability initiatives in place you would like us to document?	No.	No.	Not at this time.	None.	No.
7. Any ideas or suggestions for sustainability improvements at your facility?	Upgrade to led lighting, and add solar panels on hangars.	Solar panels on hangar rows if able to support.	Not certain that the airfield has any areas suitable for a solar array installation to supplement electricity use but might be worth a look.	Desert landscaping.	No.



Appendix B – Sustainability Initiatives and Strategies

Once the baselines and general goals were established for each focus area (see Plan), strategies for contributing to these goals were identified using a number of resources including the consultant's internally developed resources documenting initiatives that have been considered, assessed and implemented on at airports across the country. Additional sources included the County ideas and commitments and external resources such as the Sustainable Aviation Guidance Alliance (SAGA), various projects completed by the Transportation Research Board (TRB) Airport Cooperative Research Program, and the Envision and LEED rating systems. Over 150 ideas were identified.

B.1 – Recommended Short-Term Strategies

In order to determine a holistic set of strategies that could be implemented and will provide value to the County in the short term, strategies were screened and prioritized considering several factors displayed below:



This process led to numerous strategies being recommended for implementation. These have been sorted into:

1. Short-term strategies for Aviation Division implementation. These strategies are summarized in the Plan but additional details are provided in Section B.2 of this Appendix.
2. Short-term strategies for incorporation into Airport Operator requirements based on the current division of roles and responsibilities between the Aviation Division and Airport Operator. Similar to the above, these requirements are summarized in the Plan but additional details are provided in Section B.3 of this Appendix.
3. Sustainability Toolkit for Non-LEED Projects, which incorporates numerous sustainability strategies for non-building projects (given the County's emphasis on infrastructure projects within the short-term horizon) and positions the County for adherence to the Envision rating system. See Section B.4 of this Appendix.



B.2 – Short-Term Strategies for Aviation Division Implementation

Short-Term Strategies, Contribution to Goals, Timeframe, and Cost Implications											
#	Recommendation (screened and prioritized)	Business	Continuity	Materials	Water	Climate & Risk	Energy	Community	Timeframe	Cost to County?	Cost Notes
1	Identify, pursue and report out on transportation funding sources to convert service vehicles to electric or other alternative fuels (see Aviation Division Management Priorities/Goals for 2016/2017). (See also #15.)								Underway (June 30, 2017, deadline)	-	TBD
2	Complete update of business plan (ongoing) and implement measures identified according to the proposed schedule.								Underway	-	
3	As defined in the MAPP Goals for 2016/2017: Work with the County Geotechnical and Materials Engineering Division (GMED) to revise the Airport Pavement Management Program by reviewing current practices and establishing procedures to better manage airport pavement maintenance and pavement preservation projects.								Underway (June 30, 2017, deadline)	-	
4	As defined in the MAPP Goals for 2016/2017: Develop a Project Management Plan for FAA and Caltrans Aeronautics programs to enhance airport project delivery.								Underway (June 30, 2017, deadline)	-	
5	Promote professional development of County staff in relation to sustainability by offering compensation for staff to become Envision Sustainability Professionals or LEED Accredited Professionals.								Underway / Continuous	Y	Minimal cost.
6	Continue with water conservation measures and restrictions implemented during California’s severe drought.								Underway / Continuous	-	
7	Continue to host annual waste roundups at two or more of the facilities (coordinated with other County division).								Underway / Continuous	-	
8	Encourage alignment of airport facilities/services with educational institutions (e.g., Antelope Valley College lease of the old museum hangar at WJF).								Underway / Continuous	-	
9	Continue with the annual Airport Customer Service Surveys. For any airport with survey results below the goal, require that a plan be submitted and implemented to address areas of concern. Every two years increase the Airport Customer Service Aviation Division goal by 0.1 until this is increased to 4 out of 5 (goal is currently 3.5 out of 5; achieved 3.79 in 2016).								Underway / Continuous (with updates per recommendation)	-	
10	Ensure that public meetings are at varied times and locations.								Underway / Continuous	-	
11	When a need arises for a new facility/space, evaluate existing buildings on site to determine potential for adaptive reuse.								Underway / Continuous	-	
12	For all new or improved building projects, follow County’s LEED policy and require installation or replacement of existing HVAC, plumbing fixtures, and lighting with energy-efficient alternatives. Conduct a cost-benefit analysis for solar water heaters, noting that the energy required to heat water is significant and this could be a major cost-saving measure.								2017 and Continuous Thereafter	Y	May involve additional upfront costs but will be offset by operational savings.
13	Apply the Toolkit for Non-LEED Projects.								2017 and Continuous Thereafter	-	
14	Incorporate identification of alternative funding sources for non-AIP eligible projects during internal, annual Airport Capital Improvement Program (ACIP) discussions, including local, state and federal programs.								2017 (fall) and Annually Thereafter	-	
15	Pursue Zero Emissions and Vehicle Infrastructure (ZEV) Program funds for purchase of electric fleet/service vehicles in FY2018.								2017 (begin coordination)	Y	\$37,500 Based on application prepared for two electric utility vehicles (FAA would match this amount).
16	Share questionnaire results from airport managers indicating inconsistent use of electronic work order system and best practices being used at different facilities with the Airport Operator to further enhance preventative and responsive maintenance procedures.								2017	-	Little effort required.

Short-Term Strategies, Contribution to Goals, Timeframe, and Cost Implications											
#	Recommendation (screened and prioritized)	Business Continuity	Materials	Water	Climate & Risk	Energy	Community	Timeframe	Cost to County?	Cost Notes	
17	For new projects or any lighting/signage at the end of their useful life, upgrade to LEDs. This includes airfield lighting and signage. Notes: 1) none of the airports have high-intensity runway lighting, which is the only level not currently eligible for AIP funds. Therefore, FAA funding is available. 2) Initiative also incorporated into Toolkit for Non-LEED Projects.							2017 (begin with upcoming design projects) and Continuous Thereafter	Y	TBD; upfront costs may increase but energy efficiency and reduced maintenance justify LEDs particularly in Southern California due to high energy rates.	
18	Show leadership in aviation sustainability by pursuing Envision verification and/or LEED certification (see County policy) for at least one Aviation Division project.							2018 (target for first project to be verified/certified underway)	Y	Verification and certification costs involved.	
19	Specify drought-tolerant landscaping for all facilities (County guidance available).							2018 and Continuous Thereafter	-		
20	Establish a sustainability budget to fund projects that are not AIP-eligible and require upfront investment.							2018 (for fund establishment) and Continuous Thereafter	Y	TBD	
21	For major projects involving an alternatives assessment (e.g., for a pavement design), identify and prioritize life cycle costs versus capital cost comparisons. Where sensible, fund any upfront incremental difference through the sustainability budget (if not AIP eligible).							2018 (following budget establishment) and Continuous Thereafter	-	Upfront costs may increase.	
22	Identify at least three areas (building-top or ground-based) viable for solar photovoltaic panels (referencing the previously prepared solar feasibility study) and market these (via RFP or direct coordination) to solar companies.							2019	-		
23	For materials excavated/removed during construction projects that cannot be reused on the project (refer to the Toolkit for non-LEED Projects and LEED/Envision policy), identify other uses on-airport, at the other County-owned airports, or at other County-owned facilities; if necessary, establish a location for stockpiling of materials for future reuse.							2019 (begin with upcoming capital projects) and Continuous Thereafter	-		
24	Incorporate sustainability criteria into approval process for tenant improvements and establish tenant improvement guidelines (or share County guidelines).							2019 (deadline for inclusion of criteria and development of guidelines) and Continuous Application Thereafter	Y	Minimal cost.	
25	Identify and implement steps that would be necessary by the County in order to enable the opening of a restaurant (third-party operated) at WHP. Initial coordination is already underway by the Airport Operator.							2019 (deadline)	-		
26	Work with one of the restaurant operators to implement a pilot composting program and report out on the success and/or challenges of the program. If feasible, move forward with permanent composting. Consider incorporating this initiative into the RFP for a future restaurant at WHP.							2019 (initiation of pilot program)	-	Likely absorbed by operator.	
27	Complete an economic impact study in 2019 and compare results to the 2013 study, sharing a summary with the public.							2019	Y	Minimal cost.	
28	Coordinate with the Regional Planning Commission to develop Airport Land Use Compatibility Plans (ALUCPs) for individual facilities (excluding POC, which has a plan published in 2015) or to update the County-wide ALUCP.							2020	-		

Short-Term Strategies, Contribution to Goals, Timeframe, and Cost Implications											
#	Recommendation (screened and prioritized)	Business Continuity	Materials	Water	Climate & Risk	Energy	Community	Timeframe	Cost to County?	Cost Notes	
29	Retrofit existing hangars with LED lighting unless hangars are within five years of their useful life. Review upcoming hangar inspection schedules or airport construction schedules requiring tenant displacements to coordinate retrofits (avoiding multiple disruptions to tenants).							2020 (deadline)	Y	TBD; upfront costs may increase but energy efficiency and reduced maintenance justify LEDs particularly in Southern California due to high energy rates.	
30	Install sensors in all County-owned buildings and areas to control lighting (including outside areas where appropriate, i.e., not affecting airfield safety); if not cost-effective, post signage encouraging users to turn off lights and describing benefits.							2020 (deadline)	Y	Upfront costs but potential for operational savings (though realized by Airport Operator).	
31	Install low-flow water fixtures and/or waterless urinals at all facilities (already implemented in several).							2020 (deadline)	Y	TBD.	
32	Post signage about the County’s diesel anti-idling policy and the benefits/importance of this policy.							2020	Y	Minimal cost.	
33	Prepare Greenhouse Gas emissions inventories for each airport in order to understand their contributions to overall County emissions and prioritize projects that will have the greatest impact in achieving emission reduction targets.							2020	Y	Minimal cost.	
34	Evaluate the benefits and costs of pursuing third-party verification of the emissions inventory through the Airports Council International – North America (ACI-NA) Airports Carbon Accreditation Program to demonstrate leadership and transparency; make decision based on results.							2020	-		
35	Pending the results of the above, pursue third-party verification of the emissions inventory through the Airports Carbon Accreditation Program to demonstrate leadership and transparency.							2020	Y	Cost associated with verification and registration.	
36	Perform a climate change vulnerability assessment of airport land and buildings and identify/implement specific strategies to mitigate risks (this would contribute to the Envision rating system).							2020 (completion of assessment)	Y	Minimal cost for assessment; strategies may require added costs.	
37	Complete update to the Rules and Regulations (previously initiated) and incorporate sustainability where feasible.							2020	-	Previously budgeted.	
38	Distribute press releases regarding specific airport projects and sustainability accomplishments (coordinate with Envision accreditation/LEED certification initiative; the Institute for Sustainable Infrastructure [ISI] and							2020 (assuming project completion)	-		
39	Assess the optimal location for (considering cost/benefit) and install a rainwater collection tank at one of the airports (at a minimum); reuse water for allowable purposes (e.g., dust control during maintenance and construction projects, tree watering, etc.).							2021	Y	Minimal cost.	
40	Implement composting at major airport events including the Air Shows.							2021 (implement at 1 or more events) and Continuous Thereafter	Y	Minimal cost.	
41	Work with involved County divisions to implement electronic submittal/review processes for design and construction projects, limiting the use of paper and streamlining administration.							2021	-	May require new system and training.	
42	Install additional electric vehicle charging stations for public and employee use, targeting availability at all airports (potentially excluding WJF depending upon potential for use). Leverage federal, state or local funding (FAA funding only available for airport-dedicated vehicles and equipment, i.e., not public use).							2021 (deadline)	Y	Potential to take advantage of funding programs.	



B.3 – Short-Term Requirements for Airport Operator

Airport Operator Requirements

Short-Term Requirements, Contribution to Goals, and Timeframe								
#	Requirements	Business Continuity	Materials	Water	Climate & Risk	Energy	Community	Timeframe
AO	In future revisions to the Airport Operator contract or in the issuance of a new Request for Proposal, require the following from the Airport Operator:							2021 (or sooner if opportunity arises)
a	Request that utilities (at least waste, energy, and water) provide actual consumption/quantity data (as opposed to costs only); track and report this information to the County by airport and facility if possible (leveraging existing sub-metering where available). Reporting shall occur during Airport Manager updates at Aviation Commission meetings. Note any periods that are outside of the typical range identifying intended solutions (e.g., fixing malfunctioning equipment) or reasoning for these peaks.							
b	Establish and implement an environmentally preferred product purchasing policy or follow County guidelines (http://dpw.lacounty.gov/epd/drp/countypolicy.cfm and http://dpw.lacounty.gov/epd/drp/paper.cfm). At a minimum, the policy should include procurement of recycled-content and/or compostable paper products, remanufactured toner cartridges, minimized packaging (i.e., purchasing in bulk whenever possible), and environmentally friendly cleaners and solvents for custodial operations.							
c	Recycle all of the following materials at the five airports and coordinate with the waste management service provider if applicable recycling is not currently available: paper, plastics (#1 and 2), cardboard, metal and aluminum containers, and glass containers. Co-locate recycling bins adjacent to all trash cans in public areas at the airports with educational signs encouraging recycling and notifying airport users of acceptable materials.							
d	Provide at least biannual educational training to on-site personnel on waste reduction and recycling practices as well as storm water pollution prevention measures.							
f	Hold a fun run at one of the facilities using the Marketing Fund to invite surrounding community members, airport users, and tenants to come together at the airport; charge a minimal fee to donate collections to a local charity. Coordinate with the County to identify an upcoming project that may necessitate a runway or taxiway closure providing an opportunity for this event at the end of construction.							



B.4 – Toolkit for Non-LEED Projects



LA County Aviation Sustainability Toolkit for Non-LEED Projects

The County has adopted the Envision rating system for non-LEED projects. **In applying this guidance, all credits should be considered by design teams.** However, the following “toolkit” sets a **foundation** for initiating these projects from the Owner’s perspective and positioning the projects for Envision application. Depending on the scale of the projects, the County may not require third-party verification/pursuit of an Envision award. However, the following would still provide benefits given their contribution to the sustainability goals documented in this SMP. **Note: The following are in addition to all regulatory requirements including NEPA, CEQA, Title VI, etc.**



Step 1: N/A or Ineligible Credits*

Due to the nature of maintenance and development at federally funded airports, there are several Envision credits that are typically ineligible or not applicable (N/A). N/A credits do not contribute to the total point calculation and award determination.

- Quality of Life (QL): Many of the local workforce/economy will not be eligible since FAA grant assurances prevent local preference.
- Natural World (NW): Many of the siting credits will not be applicable to maintenance projects (primarily the focus of the County’s 5-year ACIP projects). This is because the project locations will be pre-selected by nature of a maintenance project.
- Resource Allocation (RA): The monitoring of water systems credit will likely be N/A as it relates to operational consumption.

*These should be reviewed for confirmation depending on the project

Step 2: Requirements* for All Projects (organized by Envision credit category)



- For significant projects (>\$2M construction cost) engage intern during design or construction to support local human capital development.
- Except for projects at WJF (due to lack of bus service and remote location), encourage contractor carpooling or alternative transportation modes during pre-bid meeting and/or outreach; make contractors aware of options.
- For projects with potential to disrupt tenants and/or surrounding residents, establish a communications plan to ensure timely notifications and alerts. Include education on the project’s intent and benefits.



- At the onset of design, engage project team and sponsor to discuss sustainability priorities and opportunities.
- During Schematic, consider options to extend project lifespan (may include non-pavement elements, e.g., drainage, electrical, etc.); provide return-on-investment (ROI) estimates for County decision, noting AIP eligibility.
- In Final Design Report, include recommendations with estimated costs for preventative maintenance.
- In Request for Bid Documents (RFB), request environmental/sustainable strategy ideas and lessons learned from contractors.



- Maximize reuse potential of existing materials in rehabs and reconstructions, adhering to FAA standards.
- Identify options for beneficial, cost-effective reuse of suitable, excavated material with on-site emphasis.
- Require construction waste management tracking & reporting in Specifications with target diversion rate (%) of materials from landfills.
- Specify drought-tolerant landscaping, if applicable.
- Require that all vegetation that has to be removed be chipped for on-site mulching or composting.
- Specify LEDs where allowed for all lighting unless ROI > 10 years.



- Identify pre-disturbed areas for construction staging unless this would significantly affect construction efficiency or tenant circulation; provide reasoning if so.
- For projects involving new impervious surfaces, validate scope limits to determine if capacity or operational efficiency needs can be met with a smaller footprint; consider permeable pavements for non-aircraft areas.



- At onset of design, review climate risks and vulnerabilities (e.g., increased potential for flooding, storm surges, high-temperature events, etc.) at airport using County or other resources to determine potential impacts to the project; determine and document if these should affect design decisions.

*Although screened in consideration of FAA standards, federal, state and local requirements may preempt the above; coordinate with the County on any concerns.

Step 3: Credits Required to Achieve Enhanced or Above

Envision includes Levels of Achievement (LOAs) for each credit to drive project teams beyond conventional design. Because the following credits specifically contribute to the SMP goals, the County should require that teams achieve Enhanced or above unless reasoning is provided as to why this is not feasible. Notably, the County is not prescribing measures as to **how** to achieve a higher LOA.

- RA1.6 Reduce Excavated Materials Taken Off Site
- RA2.1 Reduce Energy Consumption
- RA3.2 Reduce Potable Water Consumption (if Project involves water consumption post-construction)





Appendix C – Evaluation Framework

The Aviation Division may choose to leverage the evaluation framework used in the Plan to screen and prioritize future ideas. The following summarizes this framework.

Step 1: Screening – Feasibility and Relevance

Strategy Idea	Highly Applicable/ Relevant to County Airports' Facilities and Operations	Within Sponsor Control	Complies with Regulations (e.g., FAA)
[Enter Here]	Yes/No?	Yes/No?	Yes/No?

If answered Yes for all of the above, Continue to Step 2.

Step 2: Screening – Ripe for Implementation

Strategy Idea	Funding Potentially Available	No Negative Opera- tions & Mainte- nance Implications	Staff Resources Available
[Enter Here]	Yes/No?	Yes/No?	Yes/No?

If answered Yes for all of the above, Continue to Step 3.

Step 3: Prioritization

While the following is not a complete tool for prioritization (given the scope of this planning effort), considering the idea's contribution to the Aviation Division sustainability goals as well as the cost implications will help inform decision-making.

	Contribution to Goals (Positive, Negative, or Neutral)						Costs (high, medium, low)
Strategy Idea	Business Continuity	Materials	Water	Climate & Risk	Energy	Community	
[Enter Here]							